

ADDITIONAL NOTES ON THE ERIOCAULACEAE. XLVII

Harold N. Moldenke

ERIOCAULACEAE Lindl.

Additional bibliography: G. Gardn. in Hook. f., Icon. Pl. 6 [ser. 2, 2]: vi & viii, pl. 510, 512, & 523—528. 1843; H. Fisch., Beitr. Vergleich. Morph. Pollen 56. 1890; Chod. & Hassler, Bull. Herb. Boiss., ser. 2, 3: 1033—1034. 1903; Chod. & Hassler, Plant. Hassler. 2: 255—256. 1903; Gathorne-Hardy, Wild Fls. Brit. 87 & 118, pl. 76. 1938; Roberty, Pet. Fl. Ouest-Afric. 365—366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 1: 19 (1954), 2: 1 (1963), and 3: 62—64, fig. 336—338. 1968; Richards & Morony, Check List Fl. Mbala 261—262. 1969; Suwal, Fl. Phulch. & Godaw. 122. 1969; M. A. Martin, Introd. Ethnobot. Camb. 177. 1971; Beadle, Evans, Carolin, & Tindale, Fl. Sydney Reg., ed. 2, 590. 1972; D. S. & H. B. Correll, Aquat. & Wetland Fl. SW. U. S. 588—[594], fig. 301—304. 1972; Hepper, Fl. West Trop. Afr., ed. 2, 3: 540. 1972; Knobloch, Taxon 21: 101. 1972; Huang, Pollen Fl. Taiwan 260—261, pl. 171, fig. 6—7. 1972; Okuyama, Journ. Jap. Bot. 47: 126. 1972; Stafleu, Internat. Code Bot. Nom. 282, 383, & 388. 1972; J. F. Lewis, Pl. Prov. Cont. U. S. 49 [mss.] 1972; Moldenke, Phytologia 26: 179—202 & 226—262. 1973; Moldenke, Biol. Abstr. 55: 4242. 1973; Anon., Biol. Abstr. 55 (9): B.A.S.I. C. S.87, S.114, S.185, & S.250. 1973; Marquis, Who's Who East, ed. 14, 572. 1973; Hepper, Kew Bull. 27: 305. 1973; Ralph, Check List Vasc. Pl. Coast. Pl. Comm. 16. 1973.

Knobloch (1972) records 3 hybrids in this family, but does not name them. Huang (1972) describes the pollen of Taiwanese Eriocaulaceae as "Grains spiraperturate; spheroidal to subspheroidal; 17—34 μ wide; exine 1 μ thick; tectum with gemmate processes; sexine granulate, with LO-pattern; nexine thinner than sexine."

BLASTOCAULON Ruhl.

Additional bibliography: G. Gardn. in Hook. f., Icon. Pl. 6 [ser. 2, 2]: vi & viii, pl. 525. 1843; Moldenke, Phytologia 26: 15—16. 1973.

BLASTOCAULON RUPESTRE (G. Gardn.) Ruhl.

Emended synonymy: Paepalanthus rupestris G. Gardn. in Hook. f., Icon. Pl. 6 [ser. 2, 2]: pl. 525. 1843.

Additional & emended bibliography: G. Gardn. in Hook. f., Icon. Pl. 6 [ser. 2, 2]: vi & viii, pl. 525. 1843; Moldenke, Phytologia 25: 246. 1973.

ERIOCAULON Gron.

Additional bibliography: H. Fisch., Beitr. Vergleich. Morph. Pollen 56. 1890; Chod. & Hassler, Bull. Herb. Boiss., ser. 2, 3: 1033 & 1034. 1903; Chod. & Hassler, Plant. Hassler. 2: 255 &

256. 1903; Gathorne-Hardy, Wild Fls. Brit. 87 & 118, pl. 76. 1938; Roberty, Pet. Fl. Ouest-Afric. 365—366. 1954; Faegri & Iversen, Introd. Scandinav. Pollen Fl., ed. 2, pr. 1, 193 & 221 (1964) and ed. 2, pr. 2, 193 & 221. 1966; Richards & Morony, Check List Fl. Mbala 261—262. 1969; Suwal, Fl. Phulch. & Godaw. 122. 1969; M. A. Martin, Introd. Ethnobot. Camb. 177. 1971; Beadle, Evans, Carolin, & Tindale, Fl. Sydney Reg., ed. 2, 590, fig. 49. 1972; D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S., 588—593, fig. 301—303. 1972; Hepper, Fl. West Trop. Afr., ed. 2, 3: 540. 1972; J. F. Lewis, Pl. Prov. Cont. U. S. 49 [mss.] 1972; Huang, Pollen Fl. Taiwan 260—261, pl. 171, fig. 6—7. 1972; Okuyama, Journ. Jap. Bot. 47: 126. 1972; Anon., Biol. Abstr. 55 (9): B.A.S.I.C. S.87. 1973; Ralph, Checklist Vasc. Fl. Coast. Pl. Comm. 16. 1973; Moldenke, Phytologia 26: 179—184, 195, 228, 229, 233, 239, 252, & 256—258. 1973.

The Chodat & Hassler (1903) reference, cited above, is sometimes erroneously cited as "ll: 256". The Corrells (1972) report that in the southwestern part of the U.S.A. the leaves of some species of this genus are said to be eaten by ducks.

ERIOCAULON ABYSSINICUM Hochst.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 3: 68, fig. 338, 19 (1968) and 3: 540. 1972; Moldenke, Phytologia 25: 231 & 247. 1973.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 19. 1968.

ERIOCAULON ADAMESII Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 64, fig. 338, 26 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 340. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 26. 1968.

ERIOCAULON AFZELIANUM Wikstr.

Additional synonymy: Eriocaulon afzelianum "Wikstr. ex Körn." apud Hepper, Fl. West Trop. Afr., ed. 2, 3: 540. 1972.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 1: 8 (1954), 3: 62, fig. 336, 10 (1968), and 3: 540. 1972; Moldenke, Phytologia 25: 121. 1973.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 10. 1968.

ERIOCAULON AQUATICUM (J. Hill) Druce

Additional bibliography: H. Fisch., Beitr. Vergleich. Morph. Pollen 56. 1890; Gathorne-Hardy, Wild Fls. Brit. 87 & 118, pl. 76. 1938; E. G. Voss, Mich. Fl. 1: 374 & 478. 1972; Moldenke, Phytologia 26: 17. 1973.

Additional illustrations: Gathorne-Hardy, Wild Fls. Brit. pl. 76. 1938.

ERIOCAULON BIFISTULOSUM Van Heurck & Muell.-Arg.

Additional bibliography: Roberty, Pet. Fl. Ovest-Afric. 366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 1: 7 (1954), 3: 62 (1968), and 3: 540. 1972; Moldenke, Phytologia 25: 122 & 231. 1973.

ERIOCAULON BONGENSE Engl. & Ruhl.

Synonymy: Eriocaulon bongense "Engl. & Ruhl. ex Ruhl." apud Hepper, Fl. West Trop. Afr., ed. 2, 3: 540. 1972.

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 338, 18 (1968) and 3: 540. 1972; Moldenke, Phytologia 25: 231 & 248 (1973) and 26: 40. 1973.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 18. 1968.

ERIOCAULON BREVISCAPUM Körn., Linnaea 27: 676—677. 1856 [not E. breviscapum Mart., 1959].

Additional bibliography: Moldenke, Phytologia 24: 347. 1972.

ERIOCAULON CEYLANICUM Körn.

Additional bibliography: Moldenke, Phytologia 26: 180. 1973.

Additional citations: CEYLON: K. Larsen AAU70-29499 (Ac).

ERIOCAULON CINEREUM R. Br.

Additional synonymy: Eriocaulon cinereum var. sieboldianum (Sieb. & Zucc.) T. Koyama ex Huang, Pollen Fl. Taiwan 260. 1972. Eriocaulon cinereum sieboldianum Huang, Pollen Fl. Taiwan pl. 171, fig. 4 & 5. 1972.

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 19 (1954), 3: 63, fig. 337, 21 (1968), and 3: 540. 1972; Huang, Pollen Fl. Taiwan 260, pl. 171, fig. 4 & 5. 1972; Moldenke, Phytologia 26: 19—20 & 29. 1973.

Additional illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 337, 21. 1968; Huang, Pollen Fl. Taiwan pl. 171, fig. 4 & 5. 1972.

Huang (1972) describes the pollen grains of this species as 17--30 μ wide, on the basis of Huang 3477 from Formosa.

ERIOCAULON COMPRESSUM Lam.

Additional bibliography: D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. 590—592, fig. 302. 1972; Ralph, Checklist Vasc. Pl. Coast. Fl. Comm. 16. 1973; Moldenke, Phytologia 26: 180—181. 1973.

Additional illustrations: D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. [591], fig. 302. 1972.

The Corrells (1972) describe the habitat of this plant as "still shallow water of acid ponds, swamps and low pinelands, and in streams in e. Tex., spring; from s. N. J. to Fla., w. to La. and e. Tex." Their illustration looks more like var. harperi Moldenke than it does the typical form of the species.

Additional citations: SOUTH CAROLINA: Jasper Co.: Ahles, Rad-

ford, & Ornduff 56507 (Bl-180732). GEORGIA: Berrien Co.: Lemon FL.236 [Herb. For. Serv. 94987] (Bl-52567). McIntosh Co.: Moldenke & Moldenke 26417 (Ps-1342).

ERIOCAULON CRASSISCAPUM Bong.

Additional bibliography: Moldenke, *Phytologia* 26: 21. 1973.

The Krapovickas, Cristóbal, Arbo, Maruffak, Maruffak, & Irigoyen 17252, distributed as E. crassiscapum and referred to in *Phytologia* 24: 352 (1972) and 25: 124 (1973), is actually E. argentimm Castell. rather than E. leptophyllum Kunth.

ERIOCAULON DECANGULARE L.

Additional bibliography: D. S. & H. B. Correll, *Aquat. & Wetland Fl. SW. U. S.* [589] & 590, fig. 301. 1972; Ralph, *Checklist Vasc. Pl. Coast. Fl. Comm.* 16. 1973; Moldenke, *Phytologia* 26: 182 & 183. 1973.

The Corrells (1972) describe the habitat and distribution of this species as "In moist meadows and pinelands, savannahs, bogs, swamps and pond-margins in e. Tex., spring; from N. J. to Fla. and w. along the Gulf Coast to e. Tex. Plants with binary heads are sometimes found." Their fig. 301 probably represents f. parviceps Moldenke rather than the typical form of the species.

Additional citations: NORTH CAROLINA: Sampson Co.: Ahles & Haesloop 30046 (Bl-150322). FLORIDA: Hernando Co.: R. A. Howard 12953 (Bl-108034).

ERIOCAULON DECANGULARE f. PARVICEPS Moldenke

Additional bibliography: D. S. & H. B. Correll, *Aquat. & Wetland Fl. SW. U. S.* [589], fig. 301. 1972; Moldenke, *Phytologia* 26: 182. 1973.

Illustrations: D. S. & H. B. Correll, *Aquat. & Wetland Fl. SW. U. S.* [589], fig. 301 (as E. decangulare). 1972.

ERIOCAULON DEIGHTONII Meikle

Additional bibliography: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: 63, fig. 336, 15 (1968) and 3: 540. 1972; Moldenke, *Phytologia* 24: 355. 1972.

Illustrations: Hepper, *Fl. West Trop. Afr.* 3: fig. 336, 15. 1968.

ERIOCAULON ELEGANTULUM Engl.

Additional bibliography: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: 63, fig. 336, 14 (1968) and 3: 540. 1972; Moldenke, *Phytologia* 24: 457-458. 1972.

Illustrations: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: fig. 336, 14. 1968.

ERIOCAULON FULVUM N. E. Br.

Additional bibliography: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: 63, fig. 338, 20 (1968) and 3: 540. 1972; Moldenke, *Phytologia* 24: 460. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 20. 1968.

ERIOCAULON HEUDELII N. E. Br.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Moldenke, Phytologia 24: 464. 1972.

ERIOCAULON INTRUSUM Meikle

Additional synonymy: Eriocaulon lacteum "of ed. 1" apud Hepper, Fl. West Trop. Afr., ed. 2, 3: 540, in syn. 1972.

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 2 (1954), 3: 62, fig. 337, 2 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 466-467. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 337, 2. 1968.

ERIOCAULON INUNDATUM Moldenke

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 336, 13 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 467 (1972) and 25: 231. 1973.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 13. 1968.

ERIOCAULON IRREGULARE Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 337, 23 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 467. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 337, 23. 1968.

ERIOCAULON JORDANI (Moldenke) Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 338, 17 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 467. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 17. 1968.

ERIOCAULON KÖRNICKIANUM Van Heurck & Muell.-Arg.

Additional bibliography: D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. 590. 1972; Moldenke, Phytologia 24: 469 (1972) and 25: 91. 1972.

The Corrells (1972) describe the habitat and distribution of this species as "In springy places on prairies and wet sandy soil in e. Okla., spring; also Ark. and probably Tex. No Texas material has been seen but the type is considered to have been collected in 'East Texas' (Tyler Co.) by Charles Wright." Actually, besides the Wright collection from Tyler County, the species was collected in Polk County by Tharp (cfr. Phytologia 3: 153 & 328).

ERIOCAULON LATIFOLIUM J. Sm.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366.

1954; Hepper, Fl. West Trop. Afr., ed. 2, 1: 4 (1954), 3: 62, fig. 336, 4 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 470. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 4. 1968.

ERIOCAULON LEPTOPHYLLUM Kunth

Additional bibliography: Moldenke, Phytologia 26: 17, 27, & 30. 1973.

The Krapovickas, Cristóbal, Arbo, Maruffak, Maruffak, & Irigoyen 17252 previously cited by me as E. leptophyllum is better regarded as E. argentinum Castell. and the comments made concerning the notes by Krapovickas regarding its habitat and his identification of it as E. crassiscapum should be deleted.

ERIOCAULON LIGULATUM (Vell.) L. B. Sm.

Additional bibliography: Moldenke, Phytologia 26: 183. 1973.

Additional citations: BRAZIL: Paraná: Hatschbach 22557 (Ac). Santa Catarina: Smith & Klein 15591a (N).

ERIOCAULON MACULATUM Schinz

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 18 (1954), 3: 63 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 474. 1972.

ERIOCAULON MAGNUM Abbiatti

Additional bibliography: Moldenke, Phytologia 25: 126. 1973.

The Hassler 9428, cited below, has been misidentified and distributed in some herbaria as Paepalanthus planifolius (Bong.) Körn.

Additional citations: PARAGUAY: Hassler 9428 (Ca—929581, N).

ERIOCAULON MAMFEËNSE Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 62, fig. 336, 3 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 476. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 3. 1968.

ERIOCAULON MEIKLEI Moldenke

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 337, 16 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 476. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 337, 16. 1968.

ERIOCAULON MELANOCEPHALUM Kunth

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 7 (1954), 3: 62 (1968), and 3: 540. 1972; Moldenke, Phytologia 26: 183. 1973.

ERIOCAULON MERRILLII Ruhl.

Additional bibliography: Huang, Pollen Fl. Taiwan 260. 1972; Moldenke, Phytologia 25: 126. 1973.

Huang (1972) describes the pollen grains of this species as 23—25 μ wide, on the basis of Sasaki 327 from Formosa. This is the first "record" of this species from Formosa and has not been verified by me.

ERIOCAULON MICROCEPHALUM H.B.K.

Additional bibliography: Moldenke, Phytologia 26: 30. 1973.

Additional citations: ECUADOR: Carchi: Penland & Summers 903 (B1—217294).

ERIOCAULON MUTATUM N. E. Br.

Additional bibliography: Richards & Morony, Check List Fl. Mbala 261. 1969; Moldenke, Phytologia 24: 481. 1972.

Richards & Morony (1969) cite M.R. 5678 & 15133, flowering in May at 5000 feet altitude in Uganda.

ERIOCAULON NANTOENSE Hayata

Additional bibliography: Huang, Pollen Fl. Taiwan 260. 1972; Moldenke, Phytologia 24: 482. 1972.

Huang (1972) describes the pollen grains of this species as 21—25 μ wide, on the basis of Nakamura 4221 from Formosa.

ERIOCAULON NEPALENSE Prescott

Additional bibliography: Suwal, Fl. Phulch. & Godaw. 122. 1969; Moldenke, Phytologia 24: 483 (1972) and 25: 84. 1972.

ERIOCAULON NIGERICUM Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 336, 12 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 483. 1972.

Additional illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 12. 1968.

ERIOCAULON NILAGIRENSE Steud.

Additional bibliography: Moldenke, Phytologia 26: 31—32, 34, & 35. 1973.

Additional citations: CEYLON: K. Larsen AAU70-29643 (Ac).

ERIOCAULON PARKERI B. L. Robinson

Additional bibliography: Ralph, Checklist Vasc. Pl. Coast. Pl. Comm. 16. 1973; Moldenke, Phytologia 26: 20 & 33. 1973.

ERIOCAULON PELLUCIDUM Michx.

Additional bibliography: H. Fisch., Beitr. Vergleich. Morph. Pollen 56. 1890; D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. 590 & 592. 1972; Ralph, Checklist Vasc. Pl. Coast. Pl. Comm. 16. 1973; Moldenke, Phytologia 26: 183. 1973.

Additional citations: LABRADOR: Gillett & Findlay 5471 (B1—

107858). NOVA SCOTIA: Halifax Co.: Calder 45-1392 (Bl-81479). QUEBEC: Argenteuil Co.: Rolland-Germain s.n. [August 21, 1946] (Bl-109064). Montcalm Co.: Rousseau & Goudreault 151 (Bl-101736). Wolfe Co.: Blais, Deshaies, & Forest 10729 (Bl-209862); Brisson & Hamel 12712 (Bl-225469). NORTH CAROLINA: Washington Co.: Ponce s.n. [Radford 45084] (Bl-211221).

ERIOCAULON PLUMALE N. E. Br.

Additional synonymy: Eriocaulon plumale ssp. plumale Hepper, Fl. West Trop. Afr., ed. 2, 3: 540. 1972.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 1: 6b & 6c (1954), 3: 62, fig. 337, 7 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 492. 1972.

ERIOCAULON PLUMALE ssp. JAEGERI (Moldenke) Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 6b (1954), 3: 62, fig. 337, 7 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 492. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 337, 7. 1968.

ERIOCAULON PLUMALE ssp. KINDIAE (H. Lecomte) Meikle

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 6c (1954), 3: 62, fig. 337, 8 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 492. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 337, 8. 1968.

ERIOCAULON PULCHELLUM Körn.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 1: 23 (1954), 3: 64, fig. 338, 25 (1968), and 3: 540. 1972; Moldenke, Phytologia 24: 493. 1972.

Additional illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 25. 1968.

ERIOCAULON REMOTUM H. Lecomte

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 64, fig. 338, 24 (1968) and 3: 540. 1972; Moldenke, Phytologia 24: 496. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 24. 1968.

ERIOCAULON ROBUSTIUS (Maxim.) Mak.

Additional bibliography: Moldenke, Phytologia 26: 35. 1973.

Material of this species has been misidentified and distributed in some herbaria under the name E. sieboldtianum Sieb. & Zucc.

Additional citations: JAPAN: Honshu: Kirino 418 (Bl-158143); Togasi 915 (Bl-110891).

ERIOCAULON SCARIOSUM J. E. Sm.

Additional bibliography: Beadle, Evans, Carolin, & Tindale, Fl. Sydney Reg., ed. 2, 590, fig. 49. 1972; Moldenke, Phytologia 26: 34 & 36. 1973.

Additional illustrations: Beadle, Evans, Carolin, & Tindale, Fl. Sydney Reg., ed. 2, 590, fig. 49. 1972.

ERIOCAULON SCHIMPERI Körn.

Additional synonymy: Eriocaulon schimperi "Körn. ex Engl." apud Richards & Morony, Check List Fl. Mbala 261. 1969.

Additional bibliography: Richards & Morony, Check List Fl. Mbala 261. 1969; Moldenke, Phytologia 26: 36. 1973.

Richards & Morony (1969) cite M.R. 15270 & 19522, flowering in January and June at 4000—5000 feet altitude in Uganda.

ERIOCAULON SELLOWIANUM Kunth

Additional bibliography: Chod. & Hassler, Bull. Herb. Boiss., ser. 2, 3: 1034. 1903; Chod. & Hassler, Plant. Hassler. 2: 256. 1903; Moldenke, Phytologia 26: 23, 32, & 37—38. 1973.

Ratter and his associates describe this plant as an herb to 80 cm. tall, with white flowers, and found it growing on short-tufted campos close to a lake, flowering in May.

Additional citations: BRAZIL: Mato Grosso: Goldsmith 60 (K), 64 (K); Philcox, Fereira, & Bertoldo 3639 (K); Ratter, Santos, Souza, & Ferreira R. 1592 (Ld). PARAGUAY: Sparre & Verveorst 1790 (Bl—101953).

ERIOCAULON SELLOWIANUM var. LONGIFOLIUM Moldenke

Additional bibliography: Moldenke, Phytologia 26: 23 & 37. 1973.

Recent collectors have encountered this plant on low campos.

Additional citations: BRAZIL: Paraná: Krapovickas, Cristóbal, & Marufak 23102 (Z).

ERIOCAULON SELLOWIANUM var. MINOR Moldenke, var. nov.

Haec varietas a forma typica speciei pedunculis 7.5—18 cm. longis et vaginis 1.5—2.5 cm. longis recedit.

This variety differs from the typical form of the species in being smaller in stature during anthesis, the peduncles then only 7.5—18 cm. long and the sheaths only 1.5—2.5 cm. long.

The type of the variety was collected by R. M. Harley, G. M. Barroso, and others (no. 11388) in standing water on a low campo at Chapada dos Veadeiros, about 65 km. due north of Brasília, in Goiás, Brazil, on December 21, 1968, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. The collectors describe the plant as a fleshy-leaved herb with rather bright-green leaves and the flowers white with black anthers.

Citations: BRAZIL: Goiás: Harley, Barroso, & al. 11388 (K—type, Z—isotype).

ERIOCAULON SELLOWIANUM var. **PARANENSE** (Moldenke) Moldenke & Smith

Additional bibliography: Moldenke, *Phytologia* 26: 32—33 & 37—38. 1973.

Smith and his associates encountered this plant in a slough in Paraná.

Additional citations: BRAZIL: Paraná: Hatschbach 30992 (Ld); Smith, Klein, & Hatschbach 15667 (N).

ERIOCAULON SESSILE Meikle

Additional bibliography: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: 64, fig. 337, 27 (1968) and 3: 540. 1972; Moldenke, *Phytologia* 25: 73. 1972.

Illustrations: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: fig. 337, 27. 1968.

ERIOCAULON SETACEUM L.

Additional bibliography: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: 62, fig. 337, 9 (1968) and 3: 540. 1972; Moldenke, *Phytologia* 26: 38. 1973.

Additional illustrations: Hepper, *Fl. West Trop. Afr.*, ed. 2, 3: fig. 337, 9. 1968.

ERIOCAULON SETICUSPE Ohwi

Additional bibliography: Moldenke, *Phytologia* 26: 38. 1973.

Additional citations: JAPAN: Kyushu: Togasi 1415 (B1—157614).

ERIOCAULON STOLONIFERUM Welw.

Additional synonymy: Eriocaulon stoloniferum Rendle apud Richards & Morony, *Check List Fl. Mbala* 261. 1969.

Additional bibliography: Richards & Morony, *Check List Fl. Mbala* 261. 1969; Moldenke, *Phytologia* 25: 79. 1972.

Richards & Morony (1969) cite M.R. 19197, in flower in October at 4000 feet altitude in Uganda, growing in the water of a swift-flowing stream.

ERIOCAULON STRICTUM Milne-Redhead

Additional bibliography: Hepper, *Fl. West Trop. Afr.*, ed. 2, 1: 18 (1954), 3: 63 (1968), and 3: 540. 1972; Moldenke, *Phytologia* 25: 80. 1972.

ERIOCAULON TEUSCZII Engl. & Ruhl.

Additional synonymy: Eriocaulon teusczii Ruhl. apud Richards & Morony, *Check List Fl. Mbala* 261. 1969.

Additional bibliography: Richards & Morony, *Check List Fl. Mbala* 261. 1969; Moldenke, *Phytologia* 26: 40. 1973.

Richards & Morony (1969) cite M.R. 2084, 4385, 5102, 5966, & 22121, flowering in February, March, and August, growing in wet marshes or marshland, wet peaty marshes, damp peat, and dark soil, at 5000 to 6000 feet altitude in Uganda.

ERIOCAULON TEXENSE Körn.

Additional bibliography: D. S. & H. B. Correll, Aquat. & Wetland Fl. SW. U. S. 590 & 592—593, fig. 303. 1972; Moldenke, Phytologia 25: 125 & 127. 1973.

Additional illustrations: D. S. & H. B. Correll, Aquat. & Wetland Fl. SW. U. S. 592, fig. 303. 1972.

The Corrells (1972) describe the habitat and distribution of this species as "In bogs, swamps and moist pinelands in e. Tex., Apr.—June; from e. Tex. to s.w. Ala." However, I have seen authentic specimens of it only from Texas and Louisiana.

ERIOCAULON TOGOENSE Moldenke

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 20 (1954), 3: 63, fig. 338, 22 (1968), and 3: 540. 1972; Moldenke, Phytologia 26: 41. 1973.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 338, 22. 1968.

ERIOCAULON TRANSVAALICUM N. E. Br.

Additional bibliography: Richards & Morony, Check List Fl. Mbala 261. 1969; Hepper, Fl. West Trop. Afr., ed. 2, 1: 9a (1954), 3: 63, fig. 336, 11 (1968), and 3: 540. 1972; Moldenke, Phytologia 26: 41. 1973.

Richards & Morony (1969) cite M.R. 1545, flowering in April, growing in water of a small ditch at 4800 feet altitude in Uganda.

ERIOCAULON TRANSVAALICUM var. HANNINGTONII (N. E. Br.) Meikle

Additional synonymy: Syngonanthus hanningtonii N. E. Br. ex Richards & Morony, Check List Fl. Mbala 262. 1969.

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 1: 9a. 1954; Richards & Morony, Check List Fl. Mbala 261 & 262. 1969; Hepper, Fl. West Trop. Afr., ed. 2, 3: 63, fig. 336, 11 (1968) and 3: 540. 1972; Moldenke, Phytologia 25: 84. 1972.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 11. 1968.

Richards & Morony (1969) cite D.V.F-G. 1263 and M.R. 8158 from mud and "in pans" in slow-running streams at 5000 to 5800 feet altitude in Uganda, flowering in February and September. M.R. 1634 is cited by them as "sp. aff. E. hanningtonii" from water of peat bogs.

ERIOCAULON TRISECTUM Satake

Additional bibliography: Huang, Pollen Fl. Taiwan 260—261, pl. 171, fig. 6 & 7. 1972; Moldenke, Phytologia 25: 85. 1972.

Additional illustrations: Huang, Pollen Fl. Taiwan pl. 171, fig. 6 & 7. 1972.

Huang (1972) describes the pollen grains of this species as 23—24 μ wide, on the basis of Hibino & al. s.n. [July 1936] from Formosa.

ERIOCAULON TRUNCATUM Hamilt.

Additional & emended bibliography: Burkill, Dict. Econ. Prod. Malay Penins. 1: 590 & 953. 1966; Huang, Pollen Fl. Taiwan 261. 1972; Moldenke, Phytologia 26: 38, 40, & 41. 1973.

Huang (1972) describes the pollen grains of this species as $34\ \mu$ wide on the basis of Yamamoto s.n. [Taoyuan, May 1929] from Formosa. This is the first record of the species from Formosa and has not been confirmed by me.

ERIOCAULON WILDENOVIANUM Moldenke

Additional bibliography: M. A. Martin, Introd. Ethnobot. Camb. 177. 1971; Moldenke, Phytologia 26: 42. 1973.

ERIOCAULON WOODII N. E. Br.

Additional bibliography: Richards & Morony, Check List Fl. Mbala 262. 1969; Moldenke, Phytologia 25: 89. 1972.

Richards & Morony (1969) cite M.R. 6078 & 19197, growing in mud at the edge of the water of a swamp stream and "viviparus" in the water of a swift-flowing stream at 4000 to 5000 feet altitude in Uganda, flowering and fruiting in September and October.

ERIOCAULON ZAMBESIENSE Ruhl.

Additional bibliography: Hepper, Fl. West Trop. Afr., ed. 2, 3: 62, fig. 336, 1 (1968) and 3: 540. 1972; Moldenke, Phytologia 25: 90 (1972) and 25: 231. 1973.

Illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 336, 1. 1968.

LACHNOCAULON Kunth

Additional bibliography: D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. 588, 593, & [594], fig. 304. 1972; Moldenke, Phytologia 26: 184. 1973.

LACHNOCAULON ANCEPS (Walt.) Morong

Additional bibliography: D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. 593 & [594], fig. 304. 1972; Moldenke, Phytologia 26: 184. 1973.

Additional illustrations: D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. [594], fig. 204. 1972.

Morton encountered this plant on moist open roadsides. The Corrells (1972) describe its habitat and distribution as "In wet places in s.e. Tex., May--Oct.; Va. s. to Fla., along the Gulf Coast to Tex.; also Isle of Pines, Cuba. The white pistillate flowers mingled with the brown staminate ones impart a mixed gray and dark appearance to the heads."

Additional citations: VIRGINIA: Greensville Co.: Smith & Hodgdon s.n. [Pl. Exsic. Gray. 1028] (Bl--76184). NORTH CAROLINA: Robeson Co.: Ahles & Haesloop 28862 (Bl--159106). FLORIDA: Clay Co.: G. H. Morton 4745 (N). Leon Co.: N. C. Henderson 64-252 (Bl--199115). MISSISSIPPI: Pearl River Co.: F. H. Sargent 9167 (Bl--223049), 9218 (Bl--223051). TEXAS: Hardin Co.: Cory 52778

(Bl-90118), 57125 (Bl-103547).

LACHNOCAULON ENGLERI Ruhl.

Additional bibliography: Moldenke, *Phytologia* 26: 184. 1973.

Henderson encountered this plant on interdunal flats, flowering and fruiting in July.

Additional citations: FLORIDA: Okaloosa Co.: N. C. Henderson 64-351 (Bl-199116, Bl-208902).

LACHNOCAULON MINUS (Chapm.) Small

Additional bibliography: Moldenke, *Phytologia* 26: 184. 1973.

Recent collectors have found this plant growing at the edge of limestone sinks.

Additional citations: NORTH CAROLINA: Brunswick Co.: Bradley & Stevenson 3306 (Bl-209209); B. W. Wells s.n. [Aug. 5, 1949] (Bl-88447). New Hanover Co.: R. K. Godfrey s.n. [Pl. Exsic. Gray. 926] (Bl-76085). FLORIDA: Leon Co.: N. C. Henderson 64-238 (Bl-199117, Bl-208901).

LEIOTHRIX SCLEROPHYLLA Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 26: 185-186. 1973.

Recent collectors have found this plant on wet sandy campos, at 1350 m. altitude, fruiting in February.

Additional citations: BRAZIL: Minas Gerais: Hatschbach & Ahumada 31589 (ld).

MESANTHEMUM Körn.

Additional bibliography: Roberty, *Pet. Fl. Ouest-Afric.* 366. 1954; Richards & Morony, *Check List Fl. Mbala* 262. 1969; Moldenke, *Phytologia* 26: 186. 1973.

MESANTHEMUM ALBIDUM H. Lecomte

Additional bibliography: Roberty, *Pet. Fl. Ouest-Afric.* 366. 1954; Moldenke, *Phytologia* 25: 139 & 140. 1973.

MESANTHEMUM AURATUM H. Lecomte

Additional bibliography: Roberty, *Pet. Fl. Ouest-Afric.* 366. 1954; Moldenke, *Phytologia* 25: 139 & 140. 1973.

MESANTHEMUM ERICI-ROSENI T. Fries

Additional bibliography: Richards & Morony, *Check List Fl. Mbala* 262. 1969; Moldenke, *Phytologia* 26: 186. 1973.

Richards & Morony (1969) cite M.R. 19522, growing at the edge of a marsh in a forest at 4000 feet altitude in Uganda, flowering in January.

MESANTHEMUM PRESCOTTIANUM (Bong.) Körn.

Additional bibliography: Roberty, *Pet. Fl. Ouest-Afric.* 366. 1954; Hepper, *Fl. West Trop. Afr.*, ed. 2, 2: 1 (1963) and 3: 64. 1968; Richards & Morony, *Check List Fl. Mbala* 262. 1969; Hepper,

Fl. West Trop. Afr., ed. 2, 3: 540. 1972; Moldenke, Phytologia 25: 139 & 141. 1973.

Richards & Morony (1969) cite Matafwali 15 from Uganda and report the species as "not common" at 5300 feet altitude.

MESANTHEMUM RADICANS (Benth.) Körn.

Additional bibliography: Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Hepper, Fl. West Trop. Afr., ed. 2, 2: 4 (1963), 3: 64, fig. 339 (1968), and 3: 540. 1972; Moldenke, Phytologia 26: 45. 1973.

Additional illustrations: Hepper, Fl. West Trop. Afr., ed. 2, 3: fig. 339. 1968.

PAEPALANTHUS Mart.

Additional bibliography: G. Gardn. in Hook. f., Icon. Fl. 6 [ser. 2, 2]: vi & viii, pl. 510, 512, & 523—528. 1843; Chod. & Hassler, Bull. Herb. Boiss., ser. 2, 3: 1033 & 1034. 1903; Chod. & Hassler, Plant. Hassler. 2: 256. 1903; Roberty, Pet. Fl. Ouest-Afric. 366. 1954; Stafleu, Internat. Code Bot. Nom. 282, 383, & 388. 1972; Moldenke, Phytologia 26: 184, 186—202, & 226—262. 1973; Anon., Biol. Abstr. 55 (8): B.A.S.I.C. S.201 (1973) and 55 (9): B.A.S.I.C. S. 185. 1973; Moldenke, Biol. Abstr. 55: 4242. 1973.

PAEPALANTHUS ACANTHOPHYLLUS Ruhl.

Additional bibliography: Moldenke, Phytologia 25: 144 & 147 (1973) and 26: 238. 1973.

The Russell specimen cited below bears a label asserting that the material was being marketed as a dry-bouquet material by Associated Marketing Products, Broomfield, Colorado, and was "alleged to have come from Minas Gerais. Floral name: 'Floral Butts'."

Additional citations: BRAZIL: Minas Gerais: R. E. Russell s.n. [December 1969] (Bl—243438).

PAEPALANTHUS ALPINUS Körn.

Additional bibliography: Moldenke, Phytologia 26: 47 & 231. 1973.

The Penland & Summers 1144 distributed as P. alpinus is actually P. ensifolius (H.B.K.) Kunth.

PAEPALANTHUS ARENICOLA Alv. Silv.

Additional bibliography: Wangerin in Just, Bot. Jahresber. 57 (1): 475. 1937; Moldenke, Phytologia 25: 148. 1973.

PAEPALANTHUS ARGILLICOLA Alv. Silv.

Additional bibliography: Wangerin in Just, Bot. Jahresber. 57 (1): 475. 1937; Moldenke, Phytologia 25: 149, 161, & 229. 1973; Moldenke, Biol. Abstr. 55: 4242. 1973.

PAEPALANTHUS ARMERIA Mart.

Additional bibliography: Moldenke, Phytologia 25: 150 (1973) and 26: 47. 1973.

The Mendes Magalhães 42624, distributed as P. armeria in some herbaria, is actually P. argyropus Alv. Silv.

PAEPALANTHUS BALANSAE Ruhl.

Additional bibliography: Moldenke, *Phytologia* 25: 151. 1973.

Schinini found this plant in flower and fruit in December.

Additional citations: PARAGUAY: Schinini 5820 (Z).

PAEPALANTHUS BIFIDUS (Schrad.) Kunth

Additional bibliography: Moldenke, *Phytologia* 26: 136—137.

1973.

Additional citations: BRAZIL: Pará: Black 54-16152 (B1—124690).

PAEPALANTHUS BRACHYPUS (Bong.) Kunth

Additional bibliography: Moldenke, *Phytologia* 26: 137, 202, & 234. 1973.

Additional citations: BRAZIL: Minas Gerais: Hatschbach & Ahumada 31699 (Ld).

PAEPALANTHUS CALDENSIS Malme

Additional bibliography: Moldenke, *Phytologia* 26: 139 & 195. 1973.

Reitz has encountered this species on campos in Santa Catarina.

Additional citations: BRAZIL: Santa Catarina: Reitz 3429 (W—2104867); Smith, Klein, & Hatschbach 15695 (N).

PAEPALANTHUS CANESCENS (Bong.) Körn.

Additional bibliography: Moldenke, *Phytologia* 26: 143—146, 184, & 255. 1973.

Williams & Assis found this plant growing on campos. Material has been misidentified and distributed in some herbaria as Lachnocaulon sp.

PAEPALANTHUS COMPACTUS G. Gardn. in Hook. f., *Icon. Pl.* 6 [ser. 2, 2]: pl. 527. 1843.

Additional & emended bibliography: G. Gardn. in Hook. f., *Icon. Pl.* 6 [ser. 2, 2]: vi & viii, pl. 527. 1843; Moldenke, *Phytologia* 26: 233—234. 1973.

Emended illustrations: G. Gardn. in Hook. f., *Icon. Pl.* 6 [ser. 2, 2]: pl. 527. 1843.

PAEPALANTHUS CONDUPLICATUS Körn.

Additional bibliography: Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 40 & 53. 1930; Moldenke, *Phytologia* 26: 235—236. 1973.

PAEPALANTHUS DISTICHOPHYLLUS Mart.

Additional & emended bibliography: G. Gard. in Hook. f., *Icon. Pl.* 6 [ser. 2, 2]: vi & viii, pl. 510. 1843; Moldenke, *Phytologia* 26: 256—258. 1973.

PAEPALANTHUS DUIDAE Gleason

Additional bibliography: Moldenke, *Phytologia* 4: 141. 1952; Moldenke, *Résumé* 72 & 486. 1959; Tomlinson in C. R. Metcalfe, *Anat. Monocot.* 3: 184, 186, 187, & 191. 1969; Moldenke, *Fifth Summ.* 1: 125 (1971) and 2: 950 & 968. 1971; Moldenke, *Phytologia* 26: 262. 1973.

This species is based on G. H. H. Tate 456 from the slopes of Ridge 25, Mount Duida, Amazonas, Venezuela, deposited in the Britton Herbarium at the New York Botanical Garden. Gleason (1931) notes that "The species is obviously related to Paepalanthus roraimae Oliver and resembles it in general habit. The Roraima plant is distinguished by its acute bracts, hirsute peduncles, vaginas much exceeding the leaves, and blunt leaves only 2—3 cm. long." The Roraima plant to which he refers is now known as Rondonanthus roraimae (Oliv.) Herzog.

Maguire and his associates, as well as Steyermark, describe P. duidae as "locally frequent in open cumbre savanna", "occasional on upper escarpment slopes", "in clumps, locally frequent in rocky ravine", and "on sandstone ledges of forested rocky prominence", growing at altitudes of 1700 to 2300 meters, and found it flowering in October and December, and fruiting in January and October.

Additional citations: VENEZUELA: Amazonas: Maguire, Wurdack, & Bunting 36930 (N), 37123 (N); Maguire, Wurdack, & Maguire 42279 (N, S); J. A. Steyermark 103878 (N), 103920 (N); G. H. H. Tate 625 (N), 691 (N).

PAEPALANTHUS DUPATYA Mart. ex Körn. in Mart., *Fl. Bras.* 3 (1): 410. 1863.

Synonymy: Dupatya hirsuta Vell., *Fl. Flum.* 1: 36. 1825 [not D. hirsuta Kuntze, 1902, nor (Wikstr.) Kuntze, 1891].

Bibliography: Vell., *Fl. Flum.* 1: 36. 1825; Vell., *Fl. Flum.* *Icon.* pl. 87. 1827; Kunth, *Enum. Fl.* 3: 580, 613, & 625. 1841; Körn. in Mart., *Fl. Bras.* 3 (1): 410 & 506. 1863; Vell., *Arch. Mus. Nac. Rio Jan.* 5: 37. 1881; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, pr. 1, 2: 401. 1894; Ruhl. in Engl., *Pflanzenreich* 13 (4-30): 201, 210, & 289. 1903; Alv. *Silv.*, *Fl. Mont.* 1: 406. 1928; Moldenke, *Known Geogr. Distrib. Erioc.* 11, 30, & 47. 1946; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, pr. 2, 2: 401. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 83 & 209. 1949; Moldenke, *Résumé* 97, 280, & 486. 1959; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, pr. 3, 2: 401. 1960; Moldenke, *Fifth Summ.* 1: 161 & 481 (1971) and 2: 950. 1971.

The type of this species is Guillemin 523, collected between the city of São Paulo and Santos, in the Serra de Cubatão, São Paulo, Brazil, in February, 1839, and is deposited in the Martius herbarium at Munich. On the labels accompanying the type collection Martius indicates that he regarded this plant as representing Velloso's Dupatya hirsuta, and this obviously is the source of the specific epithet which he chose for it, there being a Pae-

palanthus hirsutus Kunth already proposed in 1841 based on a different type. Kunth (1841) was in doubt concerning the identity of Velloso's plant, since he asks "Quid Dupatya aequalis et hirsuta Velloz. Flor. Flumin. l. t. 85 et 87?".

Ruhland (1903) erroneously cites "O. Ktz. Rev. gen. II. (1891) 745" as part of his citation of Dupatya hirsuta Vell. in his synonymy of Paepalanthus dupatya. Actually, Kuntze's Dupatya hirsuta is based on Eriocaulon hirsutum Wikstr. and is now placed in the synonymy of Leiothrix hirsuta (Wikstr.) Ruhl. He comments that "Species foliorum indumento satis diversa. Utrum icon Velloziana jure huc a cl. Koernicke et Martio ducatur necne, mihi non satis constat."

Anderson and his associates encountered P. dupatya near a stream at 1200 m. altitude, flowering and fruiting in February, in an area of sloping rocky cerrado bordered by forest along a stream and by grassy recently burned campo, in sandy soil with sandstone rocks.

Citations: BRAZIL: Minas Gerais: Anderson, Stieber, & Kirkbride 36148 (Z); Archer & Mello Barreto 5018 [Herb. U. S. Nat. Arb. 177457] (N, W—2121796). São Paulo: Guillemin 523 (Br—isotype, N—isotype, N—photo of isotype, Z—photo of isotype).

PAEPALANTHUS ELATISSIMUS Alv. Silv., Fl. Serr. Min. 37, pl. 12. 1908.

Synonymy: Paepalanthus elastissimus Alv. Silv. apud Wangerin in Just, Bot. Jahresber. 57 (1): 476, sphalm. 1937.

Bibliography: Alv. Silv., Fl. Serr. Min. 37, pl. 12. 1908; Alv. Silv., Fl. Mont. 1: 34—35 & 406, pl. 16. 1928; Stapf, Ind. Lond. 4: 518. 1930; A. W. Hill, Ind. Kew. Suppl. 8: 169. 1933; Wangerin in Just, Bot. Jahresber. 57 (1): 476. 1937; Worsdell, Ind. Lond. Suppl. 2: 183. 1941; Moldenke, Known Geogr. Distrib. Erioc. 12 & 47. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 83 & 209. 1949; Moldenke, Résumé 97 & 486. 1959; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 950. 1971.

Illustrations: Alv. Silv., Fl. Serr. Min. pl. 12. 1908; Alv. Silv., Fl. Mont. 1: pl. "VVI" [=16]. 1928.

This species is based on A. Silveira 347, collected in wet places in fields "prope capão Redondo", in the Serra do Cipó, Minas Gerais, Brazil, in April of 1905 and is deposited in the Silveira herbarium. On page 406 of his work (1928) Silveira gives the date of collection of the type number as "1925", but this is certainly a misprint for "1905". The plate in the same work is labeled "VVI" through what is obviously a typographic error instead of "XVI" as is indicated in the text.

Citations: BRAZIL: Minas Gerais: A. Silveira 347 (B—isotype, Z—isotype).

PAEPALANTHUS ELATUS (Bong.) Körn. in Mart., Fl. Bras. 3 (1): 343. 1863.

Synonymy: Eriocaulon elatum Bong., Mém. Acad. Imp. Sci. St.

Pétersb., ser. 6, 1: 631, [pl. 63]. 1831. Paepalanthus elatus
Körn. in Mart., Fl. Bras. 3 (1): 343. 1863. Dupatya elata (Bong.)
Kuntze, Rev. Gen. Pl. 2: 745. 1891. Dupatya elata Kuntze apud
Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902.

Bibliography: Bong., Mém. Acad. Imp. Sci. St. Pétersb., ser. 6, 1: 631, [pl. 63]. 1831; Bong., Ess. Monog. Ericoc. 31. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 577 & 613. 1841; D. Dietr., Syn. Pl. 5: 267. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 282 & 333. 1855; Körn. in Mart., Fl. Bras. 3 (1): 343—344, 507, & 508. 1863; Kuntze, Rev. Gen. Pl. 2: 745. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878 (1893) and pr. 1, 2: 401. 1894; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 7, 213, 215, [283], 285, 289, & 290. 1903; Alv. Silv., Fl. Mont. 1: 406. 1928; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 145. 1941; Moldenke, Known Geogr. Distrib. Ericoc. 12, 29, 34, & 47. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 878 (1946) and pr. 2, 2: 401. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 83 & 209. 1949; Moldenke, Alph. List Cit. 3: 855. 1949; Moldenke, Phytologia 4: 141. 1952; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 145. 1959; Moldenke, Résumé 97, 280, 287, & 486. 1959; Moldenke, Résumé Suppl. 1: 20. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 878 (1960) and pr. 3, 2: 401. 1960; Moldenke, Fifth Summ. 1: 161 & 480 (1971) and 2: 499, 581, & 950. 1971.

This species is based on L. Riedel 1037, collected among boulders in rocky places in the Serra da Lapa, Minas Gerais, Brazil, flowering in November, and deposited in the Leningrad herbarium. An isotype in the Berlin herbarium was photographed there by Macbride as his type photograph number 10599. Bongard's original description (1831) is "acaule; foliis erectis longissimis, lanceolato-lance-acuminatis pilosis basi que ciliatis, subtus argenteis; pedunculis caespitosis pubescentibus; vaginis pilosis. Tab. LXIII. Habitat in rupibus Serra da Lapa. Floret Novembri."

Ruhland (1903) cites only the original collection. Silveira (1928) cites A. Silveira 237 from the Serra do Cipó, Minas Gerais, collected in 1905. The initial letter of the specific epithet is sometimes uppercased, for no valid reason. Kunth (1841) informs us that the plate 63 of Bongard's work was never actually published; probably it exists only in the Leningrad library or herbarium.

Additional citations: BRAZIL: Minas Gerais: L. Riedel 1037 [Macbride photos 10599] (B— isotype, N— photo of isotype, N— photo of isotype, S— isotype, Ut— 355— isotype, W— photo of isotype). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

PAEPAIANTHUS ELATUS var. CALVULUS Ruhl. in Engl., Pflanzenreich 13 (4-30): 215. 1903.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 215 & 290. 1903; Alv. Silv., Fl. Mont. 1: 406. 1928; Moldenke, Known Geogr. Distrib. Ericoc. 12 & 47. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 83 & 209. 1949; Moldenke, Résumé 97 &

486. 1959; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 950. 1971.

This variety is based on Glaziou 19962, collected in dry campos at Diamantina, Minas Gerais, Brazil, flowering in April, and is deposited in the Berlin herbarium. Ruhland (1903) cites only this one collection and describes the plant as "Differt a forma typica foliis subtus non sericeo-lanatis, sed pilis brevibus, subarrectis pubescentibus; pedunculis densius pubescentibus; bracteis involucrentibus in sicco minus recurvis." Silveira (1928) cites A. Silveira 507 from the Serra do Riacho de Vento, Minas Gerais, collected in 1908.

Citations: BRAZIL: Minas Gerais: Glaziou 19962 (B--type, Z--isotype).

PAEPALANTHUS ELONGATULUS Ruhl. in Engl., Pflanzenreich 13 (4-30): 140. 1903.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 125, 140, & 290. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Alv. Silv., Fl. Mont. 1: 406. 1928; Moldenke, Known Geogr. Distrib. Erioc. 12 & 47. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 83 & 209. 1949; Moldenke, Résumé 97 & 486. 1959; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 951. 1971.

This species is based on Glaziou 6740 from dry campos on the summit of Itatiaia, Minas Gerais, Brazil, flowering in January, and is deposited in the Berlin herbarium. The printed labels accompanying this collection are inscribed "Rio de Janeiro", apparently in error. Silveira (1928) cites A. Silveira 609, also from the Serra do Itatiaia, collected in 1908.

Ruhland (1903) cites only the original collection and comments that "Species cum P. ovato Koern. valde affinis foliorum indumento et magnitudine differt".

Citations: BRAZIL: Minas Gerais: Glaziou 6740 (B--type, Z--isotype).

PAEPALANTHUS ELONGATUS (Bong.) Körn. in Mart., Fl. Bras. 3 (1): 312--313. 1863.

Synonymy: Eriocaulon elongatum Bong., Mém. Acad. Imp. Sci. St. Pétersb., ser. 6, 1: 630, [pl. 41]. 1831. Paepalanthus elongatus Körn. in Mart., Fl. Bras. 3 (1): 299 & 312. 1863. Paepalanthus elongatus var. barbulata Körn. in Mart., Fl. Bras. 3 (1): 312--313. 1863. Dupatya elongata (Bong.) Kuntze, Rev. Gen. Pl. 2: 745. 1891. Dupatya elongata Kuntze apud Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902. Eriacolon elongatum Bong. ex Moldenke, Phytologia 4: 141, in syn. 1952. Paepalanthus elongatus var. barbulatus Körn. apud Gray Herb. Card Ind. issue 222. n.d.

Bibliography: Bong., Mém. Acad. Imp. Sci. St. Pétersb., ser. 6, 1: 630, [pl. 41]. 1831; Bong., Ess. Monog. Erioc. 30. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 575, 576, & 613. 1841; D. Dietr., Syn. Pl. 5: 267. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 279 & 333. 1855; Körn. in Mart., Fl. Bras. 3

(1): 299, 312--313, & 506. 1863; Kuntze, Rev. Gen. Pl. 2: 745. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878 (1893) and pr. 1, 2: 401. 1894; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 5--7, 9, 10, 12, 26, 141, 166, 167, [283], 285, & 290, fig. 1 B. 1903; Alv. Silv., Fl. Mont. 1: 132--133 & 406. 1928; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 41, 42, & 44. 1930; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 145. 1941; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 878 (1946) and pr. 2, 2: 401. 1946; Moldenke, Known Geogr. Distrib. Erioc. 12, 29, 34, 35, 47, & 49. 1946; Moldenke, Alph. List Cit. 1: 250. 1946; Moldenke, Phytologia 2: 377. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 83 & 209. 1949; Moldenke, Phytologia 4: 141. 1952; Moldenke in E. Y. Dawson, Los Angeles Co. Mus. Contrib. Sci. 7: 6. 1957; Moldenke, Résumé 97, 280, 285, 287, 288, 324, 325, & 486--487. 1959; Moldenke, Résumé Suppl. 1: 20. 1959; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 145. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 878 (1960) and pr. 3, 2: 401. 1960; Moldenke, Résumé Suppl. 3: 34 (1962), 11: 4 (1964), and 17: 10. 1968; Tomlinson in C. R. Metcalfe, Anat. Monocot. 3: 149, 159--161, 163, 167, 174, 187, 189, & 190. 1969; Moldenke, Phytologia 18: 87 (1969), 20: 10, 105, 107, & 108 (1970), 24: 498 (1972), 25: 229 (1973), and 26: 143. 1973; Anon., Biol. Abstr. 55 (9): B.A.S.I.C. S.135. 1973; J. A. Clark, Ind. Gen. Sp. Var. Pl. issue 222. n.d.

Illustrations: Ruhl. in Engl., Pflanzenreich 13 (4-30): 6, fig. 1 B. 1903.

This species is based on L. Riedel 290, collected near São João, in the Serra Lenheira, Minas Gerais, Brazil, and deposited in the Leningrad herbarium. Bongard's original (1831) description is "acaule; pubescens; foliis erectis linearibus obtusiusculis; pedunculis longissimis; vaginis demum glabriusculis. Tab. XII. Habitat in arenosis saxosisque Serra Lenheira prope St. João. Flor. Junio. . ."

Kunth (1841) asserts that the species is related to P. macrocephalus (Bong.) Körn., which, he says, differs in having shorter leaves. Jackson (1893) reduced Eriocaulon elongatum Bong. to synonymy under Paepalanthus helichrysoides Kunth and cites Bongard's "pl. 41" as having been truly published, but Kunth (1841) assures us that it never was published, and it is not listed by Stapf. Probably it exists only in the Leningrad library or herbarium. Ruhland (1903) cites no specimens at all, but tells us that the species grows in the "Provinzen Minas Geraës, Goyaz, Piauhy, São Paulo, wie es scheint, überall häufig, besonders in der erst genannten oft gefunden." Silveira (1928) cites A. Silveira 799 from near Grão Mogol, Minas Gerais, collected in 1926. More recent collectors have found the plant growing in wet springy areas among some rocks on gentle slopes, at an altitude of 5600 feet, flowering in May and June.

Körnicke's original (1863) description of his var. barbulata is "var. α . barbulata: foliis glabris, apice barbulatis", and he cites for it G. Gardner 2967 & 3492, Pohl 2962, and L. Riedel 299

& 2744.

The P. Clausen s.n., Glaziou 15530, and Herb. Jard. Bot. Brux. s.n., distributed as the typical form of this species, are actually var. ciliatus Körn., while Glaziou 15532 is var. pubescens Alv. Silv.

Additional citations: BRAZIL: Goiás: E. Y. Dawson 14779 (Z); G. Gardner 3492 (N, W—937203, W—1066782); Glaziou 22311 (Br, N); Onishi, Barroso, & Maia 96 (Ld); Prance & Silva 58189 (N, N, S); L. Riedel 2744 (M). Minas Gerais: Andrade 1095 [Emmerich 1056] (Bd—16655); L. Riedel 290 (N—isotype, S—isotype, Ut—356—isotype, Z—isotype). São Paulo: Guillemin 521 (Se—1280390). State undetermined: G. Gardner 2967 (N, W—937205).

PAEPALANTHUS ELONGATUS var. ANGUSTIFOLIUS Alv. Silv., Fl. Mont. 1: 133 [as "angustifolia"]. 1928.

Synonymy: Paepalanthus elongatus var. angustifolia Alv. Silv., Fl. Mont. 1: 133 & 406. 1928.

Bibliography: Alv. Silv., Fl. Mont. 1: 133 & 406. 1928; Moldenke, Known Geogr. Distrib. Erioc. 12 & 47. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 83 & 209. 1949; Moldenke, Résumé 97, 324, & 486. 1959; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 581 & 951. 1971.

Silveira (1928) describes this variety as follows: "Foliis 1 mm latis utrinque pubescentibus et vaginis glabris differt". The type was collected "In campis arenosis in Serra da Canastra", Minas Gerais, Brazil, in April of 1925 and is A. Silveira 792, deposited in the Silveira herbarium. Thus far the variety is known only from the original collection.

PAEPALANTHUS ELONGATUS var. CILIATUS Körn. in Mart., Fl. Bras. 3 (1): 312 & 313 [as "ciliata"]. 1863.

Synonymy: Paepalanthus helichrysoides Kunth, Enum. Pl. 3: 512. 1841. Eriocaulon helichrysoides (Kunth) D. Dietr., Syn. Pl. 5: 260. 1852 [not E. helichrysoides Bong., 1863]. Eriocaulon helichrysoides Kunth ex Steud., Syn. Pl. Glum. 2: [Cyp.] 283 & 334. 1855. Paepalanthus elongatus var. ciliata Körn. in Mart., Fl. Bras. 3 (1): 312 & 313. 1863. Eriocaulon helichrysoides Steud. apud Körn. in Mart., Fl. Bras. 3 (1): 312, in syn. 1863. Paepalanthus elongatus var. β Körn. ex Moldenke, Résumé Suppl. 1: 20, in syn. 1959. Eriocaulon griseoscapus Mart. ex Moldenke, Fifth Summ. 2: 502, in syn. 1971.

Bibliography: Kunth, Enum. Pl. 3: 512, 526, & 529. 1841; D. Dietr., Syn. Pl. 5: 260. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 283 & 334. 1855; Körn. in Mart., Fl. Bras. 3 (1): 312—313 & 378. 1863; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878 (1893) and pr. 1, 2: 402. 1894; Ruhl. in Engl., Pflanzenreich 13 (4—30): 167, 285, & 290. 1903; Alv. Silv., Fl. Mont. 1: 406. 1928; Moldenke, Known Geogr. Distrib. Erioc. 12, 35, 47, & 49. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 878 (1946)

and pr. 2, 2: 402. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 83, 84, & 209. 1949; Moldenke, *Phytologia* 4: 141. 1952; Moldenke, *Résumé* 97, 288, 324, 325, & 486—487. 1959; Moldenke, *Résumé Suppl.* 1: 20. 1959; *Jacks. in Hook. f. & Jacks., Ind. Kew.*, pr. 3, 1: 878 (1960) and pr. 3, 2: 402. 1960; Moldenke, *Résumé Suppl.* 11: 4 (1964) and 17: 10. 1968; Moldenke, *Phytologia* 18: 87 (1969) and 20: 10 & 360. 1970; Moldenke, *Fifth Summ.* 1: 161 (1971) and 2: 502, 581, 584, & 951. 1971; Moldenke, *Phytologia* 26: 143. 1973.

Körnicke (1863) describes this variety as "var. β . *ciliata*: foliis praesertim versus apicem dense ciliatis, ceterum glabris, raro subtus pubescentibus". As synonyms he lists *Paepalanthus helichrysoides* Kunth and an "*Eriocaulon helichrysoides* Steud. Synops. II. 283 (nec Bong., nec Steudel Synops. II. 269)". He cites as cotypes *P. Clausen s.n.* [Martius 877], *L. Riedel 290*, and *Sellow s.n.* *Ruhland* (1903) ignores Körnicke's varietal name, but his description of his var. *helichrysoides* matches that of Körnicke and he cites *Paepalanthus helichrysoides* Kunth as the name-bringing synonym for his variety. It seems obvious that the two names are synonymous and that Körnicke's has priority in the varietal category.

Although *Ruhland* (1903) mentions an *Eriocaulon helichrysoides* Steud., Steudel, in the reference cited by *Ruhland*, plainly accredits the binomial to Kunth. The *Eriocaulon helichrysoides* Bong., referred to in the synonymy above, belongs in the synonymy of *E. elichrysoides* Bong. The *Eriocaulon stellare* Guill., sometimes cited as a synonym of this variety, is actually a synonym of *Paepalanthus plumosus* (Bong.) Körn.; *P. elongatus* Körn. and *P. elongatus* var. *barbulata* Körn., also sometimes cited as synonyms, are by me regarded as belonging to typical *P. elongatus* (Bong.) Körn.

Ruhland (1903) describes his variety *helichrysoides* as "Differt a typo foliis praesertim apice dense ciliatis, ceterum glabris vel glabrusculis" and notes for its distribution only "Brasilien: mit dem Typus zusammen", with no citation of any illustrative specimens at all! Kunth (1841) claims that it and what is now known as *Syngonanthus vernonioides* (Kunth) Ruhl. are "Habitu, praesertim foliorum forma et structura....simillimus". *Eriocaulon elichrysoides* Kunth is now in the synonymy of *E. kunthii* Körn., but *E. elichrysoides* Bong. is regarded as a valid species.

The type of variety *helichrysoides* was collected by Friedrich Sellow (no. 1291) in the Serra de Capivary, Minas Gerais, Brazil, and is deposited in the herbarium of the Botanisches Museum at Berlin. The type of *P. elongatus* var. β is given as *Sellow B. 1291/C.265* in the same herbarium; that of *Eriocaulon griseoscapus* is *P. Clausen 183* in the herbarium of the Jardin Botanique National de Belgique in Brussels.

Recent collectors describe this plant as "dominant" in sandy campos, at 1300 meters altitude, flowering in February and April. One of the Brussels sheets of Glaziou 7995 is stamped "Rio de Janeiro", apparently in error.

Material of var. ciliatus has been misidentified and distributed in some herbaria under the names Eriocaulon elongatum Bong., E. stellare Guill., Paepalanthus candidus Alv. Silv., P. elongatus Körn., P. elongatus (Bong.) Körn., and P. plumosus (Bong.) Körn.

Silveira (1928) cites A. Silveira 251 from the Serra do Lenheiro, Minas Gerais, collected in 1896 and deposited in the Silveira herbarium.

It is worth noting here that the spelling of the variety epithet here employed for this taxon was corrected to "ciliatus" apparently for the first time in the Gray Herbarium Card Index issue 222, the date of which, however, is apparently now not procurable.

Additional citations: BRAZIL: Goiás: Heringer 9219/1432 [Herb. Brad. 26515] (Lw); E. Pereira 7471 [Herb. Brad. 26313] (Lw). Minas Gerais: P. Clausen 183 (B--cotype, Br--cotype), s.n. [1840] (Br, Br, S); Glaziou 9335 (W--1185317); Martius 877 ["202"; Macbride photos 18701] (B--cotype, Br--cotype); Mello Barreto 2568 [Herb. Jard. Bot. Belo Horiz. 10703] (N), 2579 [Herb. Jard. Bot. Belo Horiz. 4801 & 4803; Herb. U. S. Nat. Arb. 236409] (N, W--2109993), 4721 [Herb. Jard. Bot. Belo Horiz. 17748; Herb. U. S. Nat. Arb. 176200] (W--2121717), 4740 [Herb. Jard. Bot. Belo Horiz. 17532; Herb. U. S. Nat. Arb. 236408] (W--2121720); R. Pereira 3148 [Pabst 3983; Herb. Brad. 3835] (Lw, Z); Sellow 1291 (Br, S), B.1291/C.265 (B, B, Z); Ule 2731 [Herb. Mus. Nac. Rio Jan. 29467] (S). Rio de Janeiro: Glaziou 9995 (S). São Paulo: Glaziou 7995 (Br, Br), 15530 (Ca--947160, N, W--1185338, W--2405542), 25530 (Br); Scheidweiler s.n. (Br); Segadas-Vianna 2703 [Lev. Fitosociol. 510430-0119] (Ja), 2853 [Lev. Fitosociol. 510512-0113] (Ja). State undetermined: Glaziou 25532 (Br); Herb. Jard. Bot. Brux. s.n. (Br, Br). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

PAEPALANTHUS ELONGATUS f. GRAMINIFOLIUS Herzog ex Lützelburg, Estud. Bot. Nordeste 3: 148, hyponym. 1923.

Synonymy: Paepalanthus elongatus f. graminifolia Herzog ex Lützelburg, Estud. Bot. Nordeste 3: 148. 1923. Paepalanthus elongatus var. graminifolia Herzog ex Moldenke, Known Geogr. Distrib. Erioc. 47, in syn. 1946. Paepalanthus elongatus var. graminifolius Herzog ex Moldenke, Known Geogr. Distrib. Erioc. 12 & 47. 1946.

Bibliography: Lützelburg, Estud. Bot. Nordeste 3: 148. 1923; Moldenke, Known Geogr. Distrib. Erioc. 12 & 47. 1946; Moldenke,

Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, *Phytologia* 4: 141. 1952; Moldenke, *Résumé* 97, 324, & 486. 1959; Moldenke, *Fifth Summ.* 1: 161 (1971) and 2: 581 & 951. 1971.

It appears that the type of this form was collected by Freiherr Philipp von Luetzelburg (no. 72) at Alto Rio de Contas and/or at Minas do Rio de Contas, in central Bahia, Brazil. Possibly a collection made at Rio das Femeas, in eastern Goiás, should be regarded as a cotype collection. The literature is not clear on this matter of typification.

Citations: BRAZIL: Bahia: Luetzelburg 72 (N-isotype).

PAEPALANTHUS ELONGATUS var. *MINOR* Ruhl. in Engl., *Pflanzenreich* 13 (4-30): 167. 1903.

Bibliography: Ruhl. in Engl., *Pflanzenreich* 13 (4-30): 167 & 290. 1903; Moldenke, *Known Geogr. Distrib. Erioc.* 12 & 47. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 84 & 209. 1949; Moldenke, *Résumé* 97 & 487. 1959; Moldenke, *Fifth Summ.* 1: 161 (1971) and 2: 951. 1971.

The type of this variety was collected by Carl August Wilhelm Schwacke (no. 12038) in damp sandy places at the foot of the Serra de Lavras Novas, Minas Gerais, Brazil, and is probably deposited in the Berlin herbarium, although I did not find it among the material sent to me from there. Ruhland (1903) describes the taxon as "Differt a forma typica statura multo humiliore (pedunculis 20 cm altis, foliis 6,5-9, vaginis 5-6 cm longis); foliis toto margine dense pilis arrecto-patentibus, brevibus, aequaliter ciliatis, apice sericeo-comatis". The type and only known collection was gathered in anthesis in December.

PAEPALANTHUS ELONGATUS var. *NIGER* Moldenke, *Phytologia* 24: 498-499. 1972.

Bibliography: Moldenke, *Phytologia* 24: 498-499 (1972) and 25: 229. 1973; Anon., *Biol. Abstr.* 55 (9): B.A.S.I.C. S.185. 1973.

Citations: BRAZIL: Goiás: Irwin, Harley, & Smith 32187 (Z-type).

PAEPALANTHUS ELONGATUS var. *PUBESCENS* Alv. *Silv., Fl. Mont.* 1: 133. 1928.

Synonymy: *Paepalanthus elongatus* var. *pilosus* Alv. *Silv. ex Rennó, Levant. Herb. Inst. Agron.* 70. 1960.

Bibliography: Alv. *Silv., Fl. Mont.* 1: 133 & 406. 1928; Moldenke, *Known Geogr. Distrib. Erioc.* 12 & 47. 1946; Moldenke, *Alph. List Cit.* 1: 250. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 84 & 209. 1949; Moldenke, *Phytologia* 4: 141. 1952; Moldenke, *Résumé* 97 & 487. 1959; Rennó, *Levant. Herb. Inst. Agron.* 70. 1960; Moldenke, *Résumé Suppl.* 3: 34. 1962; Moldenke, *Phytologia* 20: 108. 1970; Moldenke, *Fifth Summ.* 1: 161 (1971) and 2: 581 & 951. 1971.

This variety is based on A. Silveira 746 from campos in the Serra do Chapadão, near Serra de Canastra, Minas Gerais, Brazil, collected in April of 1925 and deposited in the Silveira herbar-

ium. Silveira (1928) describes it as "Foliis parte ovali ac inferiore excepta utrinque patenti-pubescentibus et vaginis dense pilis brevibus patentibusque differt".

Irwin and his associates describe the plant as clump-forming, the inflorescences (in bud) to 35 cm. tall, growing on outcrops in an area of cerrado, sedge meadow (brejo), sandstone outcrops, and gallery forest, at 1500 meters altitude.

The Guillemin 521, cited by me as this taxon in a previous publication (1946), is actually Leiothrix flavescens (Bong.) Ruhl. The P. Clausen 1, cited below, bears a label reading "Cassia sp.", obviously a case of labels mixed during the mounting process.

Additional citations: BRAZIL: Goiás: Glaziou 22311 (S). Minas Gerais: P. Clausen 202 (P); Irwin, Harley, & Onishi 29039 (Z); Maguire, Mendes Magalhães, & Maguire 49298 (N); Mendes Magalhães 433 [Herb. Jard. Bot. Belo Horiz. 34301] (N). State undetermined: P. Clausen 1 [Caxoeira do Campo] (P); Glaziou 15532 (Ca—947123, N).

PAEPALANTHUS ENSIFOLIUS (H.B.K.) Kunth, Enum. Pl. 3: 501. 1841.

Synonymy: Eriocaulon ensifolium H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 1: 202—203, pl. 70. 1816. Eriocaulon ensifolium Humb. & Bonpl. apud Roem. & Schult. in L., Syst. Veg., ed. 15 nova, 2: 863. 1817. Eriocaulon ensifolium Kunth apud Poir. in Cuvier, Dict. Sci. Nat. 24: 241. 1822. Eriocaulon ensifolium Humb. apud Spreng. in L., Syst. Veg., ed. 16, 3: 776. 1826. Eriocaulon ensifolium Humb. & Kunth apud Kunth, Enum. Pl. 3: 501 & 613. 1841. Paepalanthus ensifolius Kunth apud Körn. in Mart., Fl. Bras. 3 (1): 281. 1863. Dupatya ensifolia (H.B.K.) Kuntze, Rev. Gen. Pl. 2: 745. 1891. Dupatya ensifolia Kuntze apud Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902.

Bibliography: H.B.K., Nov. Gen. & Sp. Pl., ed. quarto, 1: 254, pl. 70 (1816) and ed. folio, 1: 202—203, pl. 70. 1816; Roem. & Schult. in L., Syst. Veg., ed. 15 nova, 2: 863. 1817; Steud., Nom. Bot. Phan., ed. 1, 312. 1821; Poir. in Cuvier, Dict. Sci. Nat. 24: 241. 1822; Roem. & Schult., Mant. 2: 468. 1824; Spreng. in L., Syst. Veg., ed. 16, 3: 776. 1826; Bong., Ess. Monog. Erioc. 13. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 501—502, 613, & 624. 1841; D. Dietr., Syn. Pl. 5: 259. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 278 & 333. 1855; Körn. in Mart., Fl. Bras. 3 (1): 281, 406—407, & 508. 1863; Kuntze, Rev. Gen. Pl. 2: 745. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878 (1893) and pr. 1, 2: 401. 1894; Barnh., Bull. Torrey Bot. Club 29: 585—598. 1902; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 201, 208, [283], 285, & 290. 1903; Stapf, Ind. Lond. 3: 90. 1930; J. F. Macbr., Field Mus. Publ. Bot. 13 (363): 491—492. 1936; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 145. 1941; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 878 (1946) and pr. 2, 2: 401. 1946; Moldenke, Known Geogr. Distrib. Erioc. 5, 7, 29, 34, & 47. 1946; Moldenke, Alph.

List Cit. 1: 93 & 321. 1946; Moldenke, *Phytologia* 2: 373, 1947; R. Espinosa, *Estud. Bot. Sur Ecuad.* 1: 44, 72, 73, & 77. 1948; Moldenke, *Alph. List Cit.* 2: 352 & 580 (1948), 3: 808, 960, & 974 (1949), and 4: 1064, 1165, 1198, 1208, 1264, & 1272. 1949; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 60, 70, 73, & 209. 1949; R. Espinosa, *Estud. Bot. Sur Ecuad.* 2: 25. 1949; Moldenke, *Phytologia* 4: 141—142. 1952; Moldenke in Camp, *Mem. N. Y. Bot. Gard.* 9: 175. 1955; Durand & Jacks., *Ind. Kew. Suppl.* 1, pr. 3, 145. 1959; Moldenke, *Résumé* 67, 80, 84, 280, 287, & 487. 1959; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, pr. 3, 1: 878 (1960) and pr. 3, 2: 401. 1960; Moldenke, *Résumé Suppl.* 3: 13. 1962; Acosta-Solis, *Divis. Fitogeogr. Ecuad.* 89. 1968; Moldenke, *Résumé Suppl.* 18: 10. 1969; Tomlinson in C. R. Metcalfe, *Anat. Monocot.* 3: 174 & 189. 1969; Moldenke, *Phytologia* 20: 307, 308, & 353. 1970; Moldenke, *Fifth Summ.* 1: 118, 136, 142, & 480 (1971) and 2: 500 & 951. 1971; Moldenke, *Phytologia* 26: 243. 1973.

Illustrations: H.B.K., *Nov. Gen. & Sp. Pl.*, ed. folio, 1: pl. 70 [in color] (1816) and ed. quarto, 1: pl. 70. 1816.

The type of this species was collected by Humboldt and Bonpland "in frigidis prope Santa Fé de Bogotá et Facatativa", Cundinamarca, Colombia, and is no. 2365 in the Willdenow herbarium.

Although Ruhland (1903) and Stapf (1930) give "1815" as the date of publication of the H.B.K. work wherein this species was first described and illustrated, Barnhart (1902) definitely affirms 1816 as the actual date for both editions. Ruhland (1903) cites from Colombia: Humboldt & Bonpland s.n., Karsten s.n. (V), C. F. Lehmann s.n., Stübel 95a, and Triana 442, and from Peru: Mathews s.n. (Br, X), all deposited in the Berlin herbarium except where otherwise indicated. Macbride (1936) cites Mathews s.n. and Raimondi s.n. from San Martín, Peru.

This is a páramo species, known only from the high mountains of Colombia, Ecuador, and Peru. Collectors describe the flowers as white and have found the plant growing in marshes and mountain grass meadows and on grassy hills, at altitudes of 2100—3500 m., flowering in February, April, May, and July to October. Barclay & Juaquibioy found it "in practically cienaga (wet area) in center of quebrada (ravine) with large shrubs and vines" and "at border of cienaga with Espeletia killipii". Woytkowski calls it a "perennial herb to 17 cm. tall in dry clay slope of hills". Knight describes it as an "herb in shallow soil, dry hills, mixed with bracken fern, grasses, herbs, and numerous shrub species, burned frequently, with woodland in the ravines".

Material of this species has been misidentified and distributed in some herbaria as P. alpinus Körn. On the other hand, the R. E. Schultes 18792, distributed as P. ensifolius, is actually P. andicola Körn., while Ariste-Joseph s.n. [region of Bogotá], Cuatrecasas 5010, Edwin & Schunke V.3689, and Herb. Nac. Colomb. 58 are P. crassicaulis Körn.

Additional citations: COLOMBIA: Cauca: Barclay & Juaquibioy 5796 (N). Cundinamarca: Barclay & Juaquibioy 7717 (N); Cuatrecasas

casas 429 (F--1327426); García-Barriga, Schultes, & Jaramillo 13595 (N); Humboldt & Bonpland s.n. [Herb. Willdenow 2365] (B--isotype); Sandeman 5961 (K); Stübel 95a (B). Huila: Rusby & Pennell 763 (N, W--1041481). Norte de Santander: Cuatrecasas, Schultes, & Smith 12615 (F--1289777). ECUADOR: Azuay: Barclay & Juañibioy 8482 (N). Loja: Asplund 17979 (N, S); Harling 1570 (S), 1656 (S), 5713 (S); A. S. Hitchcock 21543 (W--1196388); D. H. Knight 790 (Ws); Maguire & Maguire 44350 (N); Penland & Summers 1144 (B1--217278); Rose, Pachano, & Rose 23188 (N, W--1022712); Sparre 16641 (S); Thien 804 (Z). Province undetermined: Jameson s.n. [southern provinces] (W--534630, W--534649). PERU: Huárico: Woytkowski 34070 (Ca--14417). San Martín: Mathews s.n. [Prov. of Chachapoyas] (Br). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

PAEPALANTHUS ERECTIFOLIUS Alv. Silv., Fl. Serr. Min. 51. 1908.

Synonymy: Paepalanthus erectilolius Alv. Silv., Fl. Mont. 1: 406, sphalm. 1928.

Bibliography: Alv. Silv., Fl. Serr. Min. 51. 1908; Alv. Silv., Fl. Mont. 1: 191--192, pl. 125 & 126. 1928; A. W. Hill, Ind. Kew. Suppl. 8: 169. 1933; Wangerin in Just, Bot. Jahresber. 57 (1): 476. 1937; Worsdell, Ind. Lond. Suppl. 2: 183. 1941; Moldenke, Known Geogr. Distrib. Erioc. 12, 47, & 48. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, Résumé 97 & 487. 1959; Moldenke, Résumé Suppl. 14: 2. 1966; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 582 & 951. 1971.

Illustrations: Alv. Silv., Fl. Mont. 1: pl. 125 & 126. 1928.

The typical form of this species is based on A. Silveira 367, collected "In pratis siccis prope Capão Redondo in Serra do Cipó", Minas Gerais, Brazil, in April of 1905 and deposited in the Silveira herbarium. The taxon is known thus far only from the type collection, and Silveira comments "Species ob bracteas involucrentes extus pilosas ab affinibus (P. specioso, P. amoeno et P. Weddeliano) certe distincta".

PAEPALANTHUS ERECTIFOLIUS var. GLABER Alv. Silv., Fl. Mont. 1: 192. 1928.

Bibliography: Alv. Silv., Fl. Mont. 1: 192 & 406. 1928; Moldenke, Known Geogr. Distrib. Erioc. 12 & 48. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, Résumé 97, 324, & 487. 1959; Moldenke, Résumé Suppl. 14: 2. 1966; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 581 & 951. 1971.

This variety is based on A. Silveira 499, collected in fields near Itambé do Serro, Minas Gerais, Brazil, in May of 1908 and is deposited in the Silveira herbarium. Silveira (1928) describes it as "Foliis basalibus et superioribus glabris a forma typica differt". Irwin & Soderstrom describe the plant as 1 meter tall, with gray-white flowering-heads, growing "among rocks, locally

common in cerrado and fields, limestone slopes", flowering in August.

Citations: BRAZIL: Distrito Federal: Irwin & Soderstrom 5126 (N, N).

PAEPALANTHUS ERECTIFOLIUS var. GRANDIFOLIUS Alv. Silv., Fl. Mont. 1: 192 [as "grandifolia"]. 1928.

Synonymy: Paepalanthus erectifolius var. grandifolia Alv. Silv., Fl. Mont. 1: 192. 1928. Paepalanthus erectilolius var. grandifolia Alv. Silv., Fl. Mont. 1: 406, sphalm. 1928.

Bibliography: Alv. Silv., Fl. Mont. 1: 192 & 406. 1928; Moldenke, Known Geogr. Distrib. Erioc. 12 & 48. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, Résumé 97, 324, & 487. 1959; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 582 & 951. 1971.

This variety is based on A. Silveira 711, collected in fields in the Chapada do Couto, near Itambé, Minas Gerais, Brazil, in April, 1918, and is deposited in the Silveira herbarium. Silveira (1928) describes it as "A forma typica foliis valde majoribus differt" and on page 406 of his work cites the type number as "911" — whether this is a typographic error at that place or is intended to be a correction of the number cited in the original description is not clear. The variety is known thus far only from the original collection, assuming that "711" and "911" are the same collection.

PAEPALANTHUS ERIGERON Mart. ex Körn. in Mart., Fl. Bras. 3 (1): 390—391. 1863.

Synonymy: Dupatya erigeron (Mart.) Kuntze, Rev. Gen. Pl. 2: 745. 1891. Dupatya erigeron Kuntze apud Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902.

Bibliography: Körn. in Mart., Fl. Bras. 3 (1): 390—391 & 507. 1863; Kuntze, Rev. Gen. Pl. 2: 745. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 2: 401. 1894; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 145. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 126, 139, 141—142, [283], & 290. 1903; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 145. 1941; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 2: 401. 1946; Moldenke, Known Geogr. Distrib. Erioc. 12, 29, & 48. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, Phytologia 4: 142. 1952; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 145. 1959; Moldenke, Résumé 97, 280, & 487. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 2: 401. 1960; Moldenke, Fifth Summ. 1: 161 & 480 (1971) and 2: 951. 1971.

This species is based on Blanchet 2601 from Jacobina, Bahia, Brazil, deposited in the Berlin herbarium where it was photographed by Macbride as his type photograph number 10600. Ruhland (1903) cites only the original collection and comments that the species is closely related to P. glaucescens Körn.

Additional citations: BRAZIL: Bahia: Blanchet 2601 [Macbride

photos 10600] (B--type, Br--isotype, Mi--isotype, N--photo of type, N--photo of type, W--photo of type). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

PAEPALANTHUS ERIOCAULOIDES Ruhl. in Engl., Pflanzenreich 13 (4-30): 182--183. 1903.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 182--183 & 290. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Moldenke, Known Geogr. Distrib. Erioc. 12 & 48. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, Résumé 97 & 487. 1959; Moldenke, Résumé Suppl. 11: 4. 1964; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 951. 1971.

The type of this species is Glaziou 22299, collected on dry campos between Rio Torto and Ponta de Paranana, Goiás, Brazil, and deposited in the Berlin herbarium where it was photographed by Macbride as his type photograph number 10601. Ruhland (1903) cites only the original collection, which was gathered in anthesis in May. Glaziou 22300 is a mixture with Syngonanthus euschemus Ruhl.

Irwin and his associates describe P. eriocauloides as having inflorescences to 35 cm. tall, the flower-heads light-gray, and found it growing in gray sandy soil of a wet campo on a mountain summit at 1200 meters altitude, flowering and fruiting in March.

Material of P. eriocauloides has been misidentified and distributed in some herbaria as P. sphaerocephalus Ruhl. The Pabst 3411 collection, cited below, has had its number changed to "3611" by someone for some reason unknown to me on one of the sheets cited.

Citations: BRAZIL: Goiás: Glaziou 22299 [Macbride photos 10601] (B--type, Br--isotype, N--isotype, N--photo of type, N--photo of type, W--photo of type), 22300, in part (Br); Herb. Fund. Zobot. Dist. Fed. 9215/1428 (Bd--26516); Heringer 9215/1428 (Z). Minas Gerais: Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 27140 (Ac, N); E. Pereira 2775 [Pabst 3411] (Bd--3840, Id).

PAEPALANTHUS ERIOPHAEUS Ruhl. in Engl., Pflanzenreich 13 (4-30): 130. 1903.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 3, 123, 129, 130, 143, & 290. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Alv. Silv., Fl. Mont. 1: 28, 60, 63, & 69. 1928; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 40. 1930; Moldenke, Known Geogr. Distrib. Erioc. 12 & 48. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 84 & 209. 1949; Moldenke, Résumé 97 & 487. 1959; Moldenke, Fifth Summ. 1: 161 (1971) and 2: 951. 1971; Moldenke, Phytologia 26: 254. 1973.

This species is based on Glaziou 19963, collected on dry campos at Diamantina, Minas Gerais, Brazil, flowering in April and deposited in the Berlin herbarium, where it was photographed by Macbride as his type photograph number 10602. Ruhland (1903)

cites only the original collection and comments that the "Species a *P. blepharocnemidi* et *blepharophoro* proximis differt 1) bracteis involucrentibus laete fuscis neque longe acuminatis, dorso pilosis, 2) pilis perigoniorum et receptaculi brunneolis, 3) vaginis laxissimis, sordide hyalino-albidis, sparse gregato-ciliolatis".

Citations: BRAZIL: Minas Gerais: Glaziou 19963 [Macbride photos 10602] (B—type, N—photo of type, N—photo of type, W—photo of type); Herb. Jard. Bot. Brux. 7 (Br, N).

PAEPALANTHUS ESPINOSIANUS Moldenke, *Phytologia* 2: 228—229. 1947.

Synonymy: *Paepalanthus espinasianus* Moldenke ex R. Espinosa, *Estud. Bot. Sur Ecuad.* 2: 25, sphalm. 1949. *Paepalanthus espinosianus* Moldenke, *Fifth Summ.* 2: 582, in syn. 1971.

Bibliography: Moldenke, *Phytologia* 2: 228—229, 373, & 380. 1947; R. Espinosa, *Bol. Inform. Cent. Nac. Quito* 2 (11-12): 46—47. 1948; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 70 & 209. 1949; R. Espinosa, *Estud. Bot. Sur Ecuad.* 2: 25. 1949; Moldenke, *Alph. List Cit.* 3: 974. 1949; Moldenke, *Phytologia* 4: 142. 1952; E. J. Salisb., *Ind. Kew. Suppl.* 11: 175. 1953; Moldenke, *Résumé* 80, 324, & 487. 1959; Moldenke, *Résumé Suppl.* 7: 4 & 5. 1963; Moldenke, *Fifth Summ.* 1: 136 & 143 (1971) and 2: 582 & 951. 1971.

Wurdack describes this plant as having "greenish-white" flowers and being "locally frequent on moist banks", at altitudes of 3100—3300 meters. It has been found flowering in August and November.

Additional citations: ECUADOR: Azuay: Sparre 18807 (S). Santiago-Zamora: J. A. Steyermark 54342 (S—-isotype). PERU: Amazonas: Wurdack 1616 (N, W—2403693).

PAEPALANTHUS EURYPHYLLUS Ruhl. in *Engl.*, *Pflanzenreich* 13 (4-30): 130—131. 1903.

Bibliography: Ruhl. in *Engl.*, *Pflanzenreich* 13 (4-30): 124, 130—131, & 290. 1903; Prain, *Ind. Kew. Suppl.* 3: 126. 1908; *Alv. Silv.*, *Fl. Mont.* 1: 406. 1928; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 84 & 209. 1949; Moldenke, *Résumé* 97 & 487. 1959; Moldenke, *Fifth Summ.* 1: 161 (1971) and 2: 951. 1971

The type of this species was collected by Henrique Carlos de Magalhães Gomes (no. 1654) in the Serra do Ibitipoca, Minas Gerais, Brazil, flowering in July, and is deposited in the Berlin herbarium where it was photographed by Macbride as his type photograph number 10603. Ruhl (1903) cites only the type collection and notes that the "Species foliis latis, bracteis involucrentibus, capitulis flavidule villosis facile distinguenda". Silveira (1928) cites *H. Magalhães 248*, also from the Serra do Ibitipoca, collected in 1896.

Anderson and his associates found this plant growing in sandy soil on a wet shaded riverbank, at 950 meters altitude, flowering and fruiting in February.

[to be continued]